CENTER FOR

# CELL SIGNALING

**CENTER** **UNIVERSITY OF UTAH**

Cell signaling consists of the set of biochemical interactions that mediate physiological changes within and between living cells. When a ligand binds to a receptor, for example, the interaction causes a biochemical response within the cell. Many diseases are associated with signaling pathways that have gone awry -- cancer, allergy, asthma, and acute inflammation are all examples of cellular responses unchecked by normally self-regulating pathways. The absence of a single protein or lipid can result in the disruption of a pathway that may be crucial for cellular function. The CCS Faculty seeks to understand these fundamental signaling pathways. By identifying technologies to manipulate the signaling processes, highly selective pharmaceutical agents can be developed to treat cancer, diabetes, and cardiovascular disease.

**ACCOMPLISHMENTS**

Echelon Biosciences, Inc., initially started in 1997 as Echelon Research Laboratories as the first spin-off company from CCS, has grown to 30 employees, has received a total of nineteen Phase I and Phase II SBIR awards, and surpassed the $1 M sales mark in 2002. With the recruitment of former Iomed executive W. Tim Miller as its president and its expansion to new space in Spring 2003, Echelon is positioned to become a premier, home-grown biotechnology company. Locally, Echelon and CCS have met with the governor's technology development officials to foster the growth of a Wasatch front biotech cluster. Echelon was awarded the Tibbetts' Award for Small Businesses again in 2002, following its first award in 1999. Echelon has established a cancer drug discovery alliance with ComGenex, a Hungarian company, a product distribution agreement with Molecular Probes, Inc. in Eugene, OR. Its discovery of signal transduction inhibitors has generated interest in alliances or investments by a dozen major pharmaceutical companies and other potential investors.

CENTER FOR

# CELL SIGNALING

**UNIVERSITY OF UTAH**

## TECHNOLOGY

Five core faculty and fifteen faculty associates bring extensive, complementary research expertise to focus on understanding the molecular mechanisms by which cells communicate, both under normal conditions and in disease states. The interdisciplinary collaborations among the faculty have produced unique insights into the molecular basis of disease. Understanding these biomolecular interactions can lead to the development of new drugs that enhance or interfere with cell signaling by small molecules. New technology from CCS has also been developed and licensed by Echelon to create a molecular sensor for directly monitoring heparin levels in blood. A microbiological assay platform invented by Dr. C. D. Poulter for identification of selective anti-anthrax agents was also optioned by Echelon. The discovery in 2002 of a natural ligand for the nuclear protein target of the $3 B/yr diabetes drug rosiglitazone emerged from collaboration by Drs. McIntyre, Prestwich, and Zimmerman.

***Can you imagine…..***

**A new class of anti-cancer drugs that correct a molecular defect that can be diagnosed very early, while the cancer can still be cured?**

echelon
biosciences incorporated

**Contact Information**

**Director: Glenn Prestwich**
**University of Utah**
**421 Wakara Way, #360**
**Salt Lake City, UT 84108**
**801-585-9704**
**gprestwich@deans.pharm.utah.edu**